

PIXEL CORRECTION SYSTEM AND METHOD FOR CMOS IMAGERS

Abstract of the Disclosure

Disclosed is a fault tolerant CMOS image sensor that includes circuitry for identifying defective pixels and masking them during image generation. Masking may involve, in one example, replacing the output of a given pixel with an average of the output of surrounding non-faulty pixels. Thus, while image sensors may be fabricated with some number of faulty pixels, the images produced by such sensors will not have undesirable bright or dark spots. The disclosed sensor includes (a) one or more pixels (active or passive) capable of providing outputs indicative of a quantity of radiation to which each of the one or more pixels has been exposed; and (b) one or more circuit elements electrically coupled to the one or more pixels and configured to identify and correct faulty pixels in the CMOS imager. The one or more pixels each include a photodiode diffusion formed in a well and a tap to power or ground also formed in the well. The disclosed sensor also identifies pixels that were initially acceptable but later became defective. The newly defective pixels so identified may then be masked to thereby increase the CMOS detector lifetime.